

Publications Relating to the Development of the Heat Melt Compactor

Construction of a Water-Absorbent, Zero-G, *Compactor* Trash Bag

2007-07-09

Technical Paper

2007-01-3262

Lance Delzeit, John W. Fisher

ABSTRACT The initial concepts and construction of a three layered, water-absorbent, zero-G, *compactor* trash bag will be described.

Testing and Analysis of the First Plastic Melt Waste *Compactor* Prototype

2005-07-11

Technical Paper

2005-01-3080

Gregory S. Pace, John Fisher

ABSTRACT A half scale version of a device called the Plastic Melt Waste *Compactor* prototype is being developed at NASA Ames Research Center to deal with plastic based wastes that are expected to be encountered in future human space exploration scenarios such as Lunar or Martian Missions.

Development and Testing of a Breadboard *Compactor* for Advanced Waste Management Designs

2007-07-09

Technical Paper

2007-01-3267

John A. Hogan, John W. Fisher, Gregory S. Pace, Eric J. Litwiller, Kanapathipillai Wignarajah

To facilitate the design of these mechanical *compaction* technologies, a breadboard *compactor* was developed to conduct a broad range of experiments focused on obtaining data regarding multiple design parameters for advanced compaction systems

Development of Plastic Melt Waste *Compactor* for Space Missions - Experiments and Prototype Design

2004-07-19

Technical Paper

2004-01-2378

Gregory S. Pace, John Fisher

ABSTRACT This paper describes current work at NASA Ames Research Center on the development of a heat melt *compactor* for space missions. Preliminary tests to characterize the behavior of composite wastes were performed to provide the data needed to design the first prototype Plastic Melt Waste *Compactor*.

Testing of a Plastic Melt Waste *Compactor* Designed for Human Space Exploration Missions

2009-07-12

Journal Article

2009-01-2363

Gregory S. Pace, Lance Delzeit, John Fisher

ABSTRACT Description of progress at NASA Ames Research Center in the development of a heat melt *compaction* device that is intended to process wet and dry wastes generated on human space exploration missions.

[Compaction Technologies for Near and Far Term Space Missions](#)

2006-07-17

Technical Paper

2006-01-2186

Gregory S. Pace, John W. Fisher

ABSTRACT This paper describes work at NASA Ames Research Center on the development of *compaction* technologies for near and far term space missions. The current efforts include the analysis and investigation of *compactor* design concepts for the Crew Exploration Vehicle and also the design and manufacture of a heat melt compactor for longer term missions.

[Waste Compaction Technology Development for Human Space Exploration Missions](#)

2007-07-09

Technical Paper

2007-01-3265

Gregory S. Pace, John Hogan, John Fisher

Waste storage volume is a major driver for the Orion waste *compactor* design. This paper describes the *compactor* design methodology and concepts as well as a description of the current prototype hardware developed at NASA Ames for 18-day lunar sorties on the Orion Crew Exploration Vehicle.

[Plastic Waste Processing and Volume Reduction for Resource Recovery and Storage in Space](#)

2003-07-07

Technical Paper

2003-01-2369

Gregory S. Pace, Suresh Pisharody, John Fisher

ABSTRACT This paper describes work that has begun at Ames Research Center on development of a heat melt *compactor* that can be used on near term and future missions. The heat melt *compactor* takes advantage of the low melting point of plastics to *compact* plastic materials using a combination of heat and pressure.

[Catalytic Decomposition of Gaseous Byproducts from Primary Solid Waste Treatment Technologies](#)

2006-07-17

Technical Paper

2006-01-2128

Thomas W. Williams, James R. Akse, James E. Atwater, John W. Fisher

Examples include the Plastic Melt Waste *Compactor* (PMWC) at NASA - Ames Research Center, the Oxidation/Pyrolysis system at Advanced Fuel Research2, and the Microwave Powered Solid Waste Stabilization and Water Recovery (MWSWS&WR) System at UMPQUA Research Company (URC).

Characterization of Heat Melt Compactor (HMC) Product Water (AIAA 2013-3394)

[Linden C. Harris](#), [Kanapathipillai Wignarajah](#), [Ric Alba](#), [Greg Pace](#), [John W. Fisher](#)
[43rd International Conference on Environmental Systems](#), 2013, 10.2514/6.2013-3394

Managing Spacecraft Waste Using the Heat Melt Compactor (HMC) (AIAA 2013-3362)

[Harry W. Jones](#), [Greg Pace](#), [John W. Fisher](#)
[43rd International Conference on Environmental Systems](#), 2013, 10.2514/6.2013-3362

An Assessment Of The Water Extraction Capabilities Of the Heat Melt Compactor (AIAA 2013-3363), [John W. Fisher](#), [Greg Pace](#), [Kanapathipillai Wignarajah](#), [Linden C. Harris](#), [Lance D. Delzeit](#), [Ric Alba](#) [43rd International Conference on Environmental Systems](#), 2013, 10.2514/6.2013-3363

Chemical characterization of the Heat Melt Compactor Water Condensate and Effluent Gas (AIAA 2013-3395)

[Lance D. Delzeit](#), [John W. Fisher](#), [Ric Alba](#), [Linden C. Harris](#) [43rd International Conference on Environmental Systems](#), 2013, 10.2514/6.2013-3395

Development of a Plastic Melt Waste Compactor for Human Space Exploration Missions - A Progress Report

[Gregory Pace](#), [John Fisher](#), [Lance Delzeit](#), [Richard Alba](#), [Alexandr Polonsky](#) [40th International Conference on Environmental Systems](#), 2010, 10.2514/6.2010-6010

Development of the Heat Melt Compactor for Waste Management during Long Duration Human Space Missions

[Gregory Pace](#), [John Fisher](#), [Lance Delzeit](#), [Ric Alba](#), [Kanapathipillai Wignarajah](#) [42nd International Conference on Environmental Systems](#), 2012, 10.2514/6.2012-3545

□ [**An Assessment of the Water Extraction Capabilities of the Heat Melt Compactor**](#)

Alba, Richard; Harris, Linden; Wignarajah, Kanapathipillai; Fisher, John; Hummerick, Mary; Pace, Gregory; Delzeit, Lance; Larson, Brian (44th International Conference on Environmental Systems, 2014-07)

□ [**Processing of Packing Foams Using Heat Melt Compaction**](#)

Harris, Linden; Alba, Richard; Wignarajah, Kanapathipillai; Fisher, John; Monje, Oscar; Maryatt, Brandon; Broyan, James; Pace, Gregory (44th International Conference on Environmental Systems, 2014-07)

□ [**Generation 2 Heat Melt Compactor Development**](#)

Turner, Mark F.; Fisher, John W.; Broyan, James; Pace, Gregory (44th International Conference on Environmental Systems, 2014-07)

□ [**Shakedown Test of the Orbital Technologies PMWC for Performance in Treating Solid Wastes**](#)

Wignarajah, Kanapathipillai; Alba, Richard; Fisher, John W.; Richardson, Tra-My Justine (45th International Conference on Environmental Systems, 2015-07)